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BIENNIAL REPORT

OF THE

RAILROAD COMMISSIONER

OF THE

STATE OF VERMONT,

FOR THE TWO YEARS ENDING

Cover

1872-74

JULY 31, 1874.

MONTPELIER:
FREEMAN STEAM PRINTING HOUSE AND BINDERY.
1874.

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BIENNIAL REPORT

OF THE

RAILROAD COMMISSIONER

OF THE

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REPORT.

To the General Assembly of the State of Vermont:

The undersigned has the honor to submit the following Report upon the condition and management of Vermont railroads together with such suggestions as to changes in our railroad laws as in my judgment would be desirable and beneficial.

Scarcely a quarter of a century has yet passed since the experiment of running railroads in this State first commenced. It was then an unsolved problem whether railroads in the State of Vermont could be made profitable, or even self-sustaining. What was twenty-five years ago an infant, with hardly strength to sustain itself, has now grown to be a giant, and exerts a mighty and controlling influence upon the interests of our State, and has during this short period of time revolutionized almost the entire State.

Twenty-five years ago two roads had just commenced a struggle for existence and business, and it was then thought by many, and even by the officers of these roads, that only one of them could survive; that the business of the State would not be sufficient to sustain two rival roads.

At this time there were but a little over two hundred miles of railroad in this State. The Vermont Central was running from the Connecticut river, in the town of Windsor, to Burlington, and the Champlain and Connecticut River (now the Rutland and Burlington) Railroad, from Bellows Falls to Burlington, by way of Rutland.

The last mentioned road was opened for travel on or about December 18, 1849, and the Vermont Central early in January,

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A. D. 1850. Each of these roads had been striving to extend its charter so as to connect with other roads, and thus secure water communication with the West at Ogdensburgh, but each opposing the other until the Vermont and Canada Railroad was chartered as a separate and independent road. They organized their company and entered into a contract with the Vermont Central, the terms of which were in substance that the Vermont and Canada was to go on and complete their road as provided by their charter and furnish it, and the Vermont Central was to run it, giving them eight per cent on the cost of construction and equipment. This road, completed from Rouses Point on the north and a junction made with the Vermont Central on the south, and the completion of the road from Rouses Point to Ogdensburgh on the northwest, would give a through line from the Atlantic ocean to Lake Ontario, and so on to the west.

During this time the Vermont Central was laboring under great financial embarrassments. The stock of the Company, to the amount of $10,000,000 (100,000 shares) realized only $5,000,000; and, in order to complete the building and equipment of the road, by vote of the company, they issued unsecured bonds from time to time for the payment of the floating debt and interest to the stockholders, &c., as follows:

$595,700 00,	payable July 1, A. D. 1852.
27,200 00,	payable October 1, A. D. 1854.
278,100 00,	payable June 1, A. D. 1856.

The bonds payable July 1, 1852, were paid and discharged by the company.

The company also issued bonds secured by a first mortgage to the amount of $2,000,000 00, payable November 1, 1861, at 7 per cent, and the bonds maturing October 1, 1854, were exchanged for the first mortgage bonds. But the unsecured bonds, becoming due January 1, 1856, were nearly all unpaid.

The company also issued their second mortgage bonds for the sum of $1,500,000 00, with interest at 7 per cent.

The company being involved in debt, and having a large floating debt hanging over it, transferred the road and all of its personal property to the trustees of the first mortgage bonds. Soon after litigations commenced, there being various interests, each antagonistic to the other. In order to secure the rights of all parties, the Vermont Central and leased lines were put in the hands of trustees and managers to be run and controlled under the supervision of the court of chancery. And thence an almost endless amount of litigations have arisen which have done more to settle and fix the railroad law of this country than any other railroad company or State in the United States.

It is highly gratifying that notwithstanding the expense of building railroads in our mountainous State, and the expensive litigations that some of the earlier companies have been subjected to, there has been a constant increase of roads in this State; until what was, twenty-five years ago, a little over two hundred miles of railroads, has now increased to nearly fifteen hundred miles. Thus the real estate has been greatly increased in value by being brought in direct communication with our great commercial centers. Markets for all classes of products of the soil are thus brought to the farmer's door; and where we had weekly and semi-weekly mails we now have daily postal facilities. The telegraph, following, or rather preceding, every line of railroad, has brought our most remote hamlet in direct communication with all parts of the country. All this has had the direct effect to increase the value of all classes of property. And while it has been of great and almost incalculable advantage to our State and common country, it may have proved of some slight disadvantage to individuals or communities.

There have been expended in the construction of railroads in this State nearly or quite $35,000,000, besides the equipment of the roads and other personal porperty of various kinds, which would amount in the aggregate to nearly $50,000,000. This sum at least is wholly (or nearly so) exempt from the burdens of taxation; and, as a matter of course, other classes of property have to bear the full burden. I can see no good reason why the real estate that is owned by railroad corporations in this State should not contribute its share towards bearing the burdens of taxation, if there can be some means devised to prevent an unjust discrimination against railroad property. And I would recommend to the Legislature that they pass a law placing in the list the real estate of railroad companies, at a fair and just valuation as compared with other real estate.

I would also recommend the passage of an act making it the duty of the Railroad Commissioner to inquire into and report to the Legislature whether any president, director, superintendent, or any other general officer, of any railroad company in this State, by threats, intimidation, or by offering place, or by depriving of place or position, has in any manner interfered with or attempted to influence the vote of any employes or workman of any company in this State. For if there is no restraint the time may come that, in the hands of unscrupulous men, these great monopolies might control the balance of power unjustly.

The railroads already built in this State have been opened for the transportation of passengers and freights without the examination and approval of any public officer ; and I am convinced that some of our railroads, being anxious to be earning something as soon as possible, have been opened and run before they were so far completed that cars could be run over them in safety. I think that reasonable caution requires that an examination should be made, and a law enacted prohibiting the opening of any new railroad for public travel until the same shall have been examined and approved by the Railroad Commissioner.

And in case any bridge or portion of any railroad should become unsafe after it had been opened for travel, and the Railroad Commissioner should become convinced, upon examination, that it was unsafe, it should be made his duty to notify the Superintendent or Manager of said road, and give him a reasonable time to repair and complete the same; and upon neglect or refusal to repair the same, the road to be liable to a severe penalty. The great number of persons passing over our railroads makes it necessary that every precaution should be used to guard against accidents.

In accordance with the form prescribed by my predecessor, I furnished each and every railroad company in this State with blank statistical interrogatories, for the two years ending August

1st, 1874, and although I have urged all of those companies to fill out and send to me said reports, I have at this date, (September 22d,) received but three reports. In order to prevent delay in future, and with a view of making it obligatory on railroad companies to make out and forward their reports, I would suggest the expediency of so amending the law relating to the biennial reports of railroad companies, as to fix the termination of the fiscal year for which they are to make up their returns, the 30th of June; and that the returns be reported and returned to the Railroad Commissioner on or before the 1st day of August following. This arrangement would make the reports uniform, and give the Commissioner sufficient time to make his report and have it in the hands of the printer in season to have it completed and ready for distribution the first of the session of the Legislature.

Every precaution should be taken to prevent the occurrence of accidents on our railroads. Perhaps there is no more fruitful source of accidents than that caused by fast running of trains. On many of the roads in this State there are necessarily many sharp curves, and the roads run along the sides of hills or over deep ravines, where mountain streams often rise suddenly and overflow their banks, carrying floodwood on the track, and often undermining the road-bed even. If the trains are being run at great speed, the danger of accidents is greatly increased. I would strongly urge that your Honorable Body pass an act that no railroad in this State shall be permitted to run any train at a rate of speed faster than thirty miles per hour. I am aware there are objections that can be urged against interference by the Legislature as to the speed of running trains—such as the need of making connections, &c, &c. All of this can be guarded against (except in cases of accident) by energy at the start, rather than by risking many lives by fast and reckless running.

Section 69 of chapter 28 of the General Statutes provides that " any railroad corporation, whose railroad is located in this State, shall not charge any larger sum for freight, merchandise or passage of passengers thereon from any way-station on said road, than is charged for a greater distance; and in case of the violation of any of the provisions of this chapter by said corporation, the excess so charged may be recovered back by the party aggrieved, in an action for money had and received, with full costs of suit." Since this act was passed there has been a great change in running railroads, or cars on railroads. Car companies have been formed for manufacturing cars and running them on our roads, but these cars are not owned by the railroads. I refer to the Pullman and Wagner Car Companies. These are run by the railroads in this State, and are frequently the only first class cars on some trains. In some instances I have been informed that travelers have been imposed upon; and complaints have been made to me from such sources that I deem it my duty to call the attention of the Legislature to the subject. I would recommend that the section referred to be so amended as to include car as well as railroad companies, to prevent their charging and collecting exorbitant fares.

Since the meeting of the Legislature two years ago, there has been somewhat of a change in the railroads in this State. The Central Vermont has organized under her new charter, and it is to be hoped that the great chancery suit between the Vermont and Canada and the Central Vermont railroads, that has been pending in the court of chancery for the past nineteen years, has been amicably settled by the officers of the said companies, by an agreement of purchase by the Central Vermont Railroad of the franchise, rolling stock, &c., of the Vermont and Canada Railroad. If this agreement is finally consummated, I think the railroads in this State will be in a far better and healthier condition than at present.

Since the report of my predecessor, the Hon. R. F. PARKER, there has been opened for travel the Missisquoi and Clyde Rivers Railroad, extending from the Province line between Sutton, P. Q., and Richford, to Newport, in this State: and this forms a direct line of communication from Montreal, via. St. Johns and Newport to Boston, forming a junction with the Connecticut and Passumpsic Rivers R. R. at Newport. This road opens up a large tract of rich farming and timber lands, bringing them into immediate communication with the markets of Boston, Montreal, &c., &c., and making another through and direct line from one great seaport and commercial center to another. As a matter of course, it adds greatly to the wealth and prosperity of that portion of our State through which it passes, as well as a portion of the Province of Canada, and forms another link in the chain that binds this country and Canada together. This line of railroad is known as the South-Eastern Township Railway, and is at present run by Col. A. B. Foster, as Manager.

On the line of this road in the township of Sutton, P. Q., a sad and terrible disaster occurred on the 13th day of August, 1874, occasioned by a violent shower carrying away a bridge. In consequence of this the morning train was precipitated into the stream, killing and severely injuring a number of passengers and employes on the train. Various reports were in circulation in reference to the accident and the cause of it, and on whom the responsibility should be placed if on any one. I did not deem it my duty to investigate the accident, occurring as it did out of this State.

The Missisquoi River Railroad has also the past year extended her railroad beyond the village of Richford, up the Missisquoi River, forming a junction with the Missisquoi and Clyde Rivers Railroad, and thus forming another valuable connection with these through lines.

The Montpelier and Wells River Railroad has been opened for travel from a junction with the Passumpsic and Connecticut Rivers Railroad at Wells River through to Montpelier. This road, though not of great extent, makes a valuable addition and connecting link with other roads in this State. It connects the Passumpsic and Connecticut Rivers Railroad with the Central Vermont Railroad. Running nearly across the State from east to west, it saves great distance in travel to persons passing from the eastern to the western part of the State, and opens up and brings into market a large amount of valuable timber and wood. This road must necessarily be of great advantage and value to the State, but more especially that portion through which it passes.

The road from Barre to Montpelier has not yet been opened for travel, but I am informed the company expects soon to have it completed. This road may not be of so much general importance as some others, but will increase the wealth of the towns through which it passes.

The Portland and Ogdensburgh Railroad has not yet been completed. The portion in this State, "The Lamoille Valley Railroad," is opened for travel from St. Johnsbury to Hydepark, and from Hydepark to Swanton the road is for the greater portion of the way graded, and most of the bridges have been built; but it has not been completed as rapidly as the friends of the road had anticipated. Owing to the stringenc yin the money market and the general distrust of most railroad securities, it has been rendered difficult to raise money to complete the road as soon as the officers of the road had hoped. But I am informed that they have made such arrangements that the road will soon be completed its entire length, and opened for travel. When this is completed, it will be one of the most important thoroughfares from our Atlantic seaboard at Portland on the east, touching our beautiful Champlain, and reaching on, connecting with Lake Ontario at Ogdensburgh, and thence on westward.

The Burlington and Lamoille Valley Railroad Company has been organized, and contemplates the construction of a road from Burlington on to Cambridge, there forming a junction with the Lamoille Valley Railroad. This, on the completion of the Caughnawaga Ship Canal, will form another important connecting link of railroad lines in the State, and there is good reason to believe that it will soon be built. Upon the completion of this and other chartered and contemplated lines in this State, we shall have greater railroad facilities than almost any other State in the Union. And no one interest should be more fostered and encouraged by the State, and, on the other hand, no public enterprise should be more closely watched and controlled with all proper safeguards to protect the interest of the public.

After my election as Railroad Commissioner I passed over nearly all of the railroads in this State, for the purpose of observing whether the various requirements of our statute were observed by those who were in charge of the various trains in this State. And I failed to discover there was any neglect of the various requirements of our statute, such as blowing whistles or ringing bells at crossings, announcing the names of stations, &c., &c. One thing I have always observed, and this cannot be too highly commended: that is, the kindness and courtesy which the conductors and others employed on the railroads in this State extend to ladies and other travelers. They answer any and all questions asked in a civil manner; giving all necessary information, assisting ladies, children and cripples on and off the cars, and rendering all necessary assistance. I cannot in justice let this opportunity pass without publicly acknowledging my obligations to the many employes of the railroads in the State for the many acts of kindness and assistance rendered me personally whenever traveling over railroads. I never have heard an uncivil word from or seen an ungentlemanly act by any conductor or other employe on any railroad in this State, to any person who treated them with civility or who was entitled to civility. This I observed before I made any personal inspection of the roads themselves.

The Legislature in 1872 passed an act requiring all railroad companies in this State to change the ladder for ascending freight cars so as to have it on the end or inside instead of on the side, as most of the cars theretofore had them, and fixing the 1st of March, 1873, when the act should go into force, and fixing a penalty of $50 per day for all companies that neglected to conform to the law. Most of the companies in this State so changed their cars as to conform to said act; but in September, 1873, I received complaints (the said act having made it the duty of the Railroad Commissioner to see that the law was duly enforced) from responsible parties, that the Passumpsic and Connecticut Rivers Railroad Company and the Missisquoi and Clyde Rivers Railroad Company had not so changed their cars as to conform to the requirements of said act. I at once made investigation and found that they still run their cars with ladders on the side. I called the attention of the Superintendent of the Missisquoi and Clyde Rivers Railroad to the matter. He informed me that they had not seen or known of the change of the law in that respect, but that they would at once change their cars so as to conform to the law; which I am satisfied they did.

I at the same time called the attention of the Superintendent and also the President of the Connecticut and Passumpsic Rivers Railroad to the fact that they had not so changed their cars to conform to the law. They informed me they would do so as soon as they could; that they had got to change all their cars in another respect to conform to the laws of Massachusetts, into which State their cars run; and as soon as they could they would change their cars to conform to our law. With this assurance I paid no further attention to it at that time, but in the month of December or January following I received other complaints from citizens of Caledonia County that they had not so changed their cars. I soon after made another investigation, and found that the company had changed their cars to conform to the law, but had not done so until in the month of December, 1873. They having then made the change which the law required, and upon taking the advice of State Auditor, Hon. W. G. Ferrin, and State Treasurer, Hon. J. A. Page, I did not commence a suit for the penalty for running their cars from the time the law came in force up to the time of the change of their cars. I preferred rather to report the facts to the Legislature for its consideration and direction.

I think all of the roads in this State have, when building new or rebuilding old bridges, so built them as to conform to the act of 1872, regulating the width and height of bridges. I would in this connection suggest the propriety of the Legislature fixing the standard height and width of the ordinary freight cars, as I am informed that builders have, from time to time, increased the height and width of cars, and that there is no standard for the same. The bridges may now be such as to conform to the law, but the next new cars put on the road may be a few inches too high or too wide. I am informed by L. E. Royes, Esq., Bridge Master of the Rutland road, that in the years of 1870, 1871 and 1872, they rebuilt quite a number of their important bridges, and that in the construction of the same they adopted nearly a uniform height and width, being from six feet, eight and one-half inches to six feet, eleven inches, from the walking-board on top of the car to the top of the bridge, and about three feet from the side of the car to the side of the bridge; and that they are sufficiently high and wide to prevent the occurrence of any possible accident. They do not, however, conform to the height and width required by the law of 1872, by from one to four inches. The rebuilding of these bridges would incur a great expense without any adequate return for the same. I would also refer you to what Mr. R. Underwood of the Lamoille Valley Railroad says on this subject, in another part of this Report.

While I consider the law referred to as a wise and reasonable one, and such a law as is required to protect life and limb of employes on our railroads, I would suggest it be so amended as to save the great expense referred to above, and also equally well serve the intent of the law, to wit: the protection of the lives of those employed on the railroads in this State.

In the month of October, 1873, I commenced to make a general inspection and personal examination of the road-bed and bridges of the railroads in this State. At this time the Connecticut and Passumpsic Rivers Railroad had just engaged David Haselton, lately from the Northern New Hampshire Railroad, as their Bridge Master. On his assuming control of that department, he, in company with N. W. Morse, Esq., Bridge Master of the Northern Railroad, and myself, made a careful and strict examination of the road and bridges; I found on this road 72 bridges all told, including highway and farm crossings. Of these some are one year old, and so on up to the opening of the road. There were quite a number of the latter that were built when the road was first constructed. Of the 72, 39 were reported good, one fair, 20 needing repair, and 11 condition poor.

I informed the President and Superintendent of the road of the condition I found them in, and they informed me that they would as soon as possible put on sufficient force to put them into first-class condition.

I made another examination of this road in the month of August, 1874, and found the road-bed had been improved and was in good condition, they having laid down new rails wherever necessary. They had rebuilt 12 bridges, thoroughly repaired 12 others, and were still at work on others wherever there seemed to be need of repair. I was surprised and highly gratified at the great improvements made in this road in the space of about ten months, the road seeming now to be in good safe running condition. I think it has been accomplished by the skill, energy and thorough manner in which Mr. Haselton and those associated with him have done their work.

The Central Vermont Railroad has now under its management and control the following different railroad lines: Missisquoi River Railroad, Addison Railroad, Vermont and Canada Railroad, Rutland Railroad, Harlem Extension, Ogdensburgh and Lake Champlain Railroad, Vermont Valley, and Vermont and Massachusetts Railroad and New London Railroad—thus forming a very long and important line of connection from the water communication at Ogdensburgh at the north and west, and New London at the south-east. I went over all these roads that are in this State in the month of July, A. D. 1874, and examined the road-bed and bridges as thoroughly as possible. The examinations of these and all other roads were made and conducted as follows: We had a special train, and were accompanied by the Superintendent, Road Master, Bridge Master, and others; I had a chair placed in the door at the rear end of the car, and thus I passed over and examined almost every foot of the road, rails. &c. When we arrived at a bridge the car was stopped, so as to examine the masonry and all of the rest of the bridge. On almost the entire line of these roads the road-bed is in an excellent condition, seems to be well cared for and guarded, and the sides of the road are clean and neat. This is owing to the care, energy and efficiency of the section-men, in taking care of the road; and there is scarcely a more responsible position, and one where there should be placed only the most faithful and trusty men. New rails and ties have been continually taking the place of worn and rotten ones, until it is now in a fine condition. I think there have been much more care and attention paid to the tracks than to depots (and this I think is right). Although they have some very fine depots, and many good ones, and perhaps the traveling and commercial public are comfortably accommodated, some of the depots look a little shabby—especially on the Harlem Extension road. And when I called the attention of A. G. Coomer, the Railroad Bridge Master of this division, to one of the worst appearing ones, he jocosely remarked, "You must be mistaken; all that needs is a Mansard roof and a coat of varnish." While a good depot is a convenience, a good, safe road-bed is a necessity.

I find in all of our roads the wooden, cast iron and all other kinds of chairs are giving place to the "fish joint," which is considered a great improvement upon them. Most of the bridges are of the "Howe Truss" pattern, which is considered the best kind of wooden bridge; being stronger and more durable than almost any other kind.

For the past year or two some of the roads in this State have put down, for the purpose of trial, a new patent rail called the Ness Silicon steel top rail, which is being manufactured at the Rolling Mill at St. Albans, Vt. They claim for this rail nearly all the advantages of the Bessemer rail, and that they are in some respects superior and are very much cheaper; the price of the common iron rail being $30.00 per ton, Silicon steel capped rail being $45.00 per ton, and the Bessemer steel rail being $75.00 per ton. And they also claim for the Silicon steel capped rail that it is much stronger in winter, less liable to be affected or broken by the frost, than the common steel rail; second, that the steel is placed where all of the wear comes, and where it is welted to the iron it is no more liable to give way than at any other part of the rail. They have been tested and tried on the Central Vermont road for over one year, and the Superintendent, Hon. J. W. Hobart, informs me that they have proved far better than they anticipated.

These rails have been manufactured at Rome, N. Y., and used on the Erie Railroad, on the Delaware Division, Susquehanna Division, Western Division, Buffalo and Rochester Division; and at all places with marked success. It is now being tried by the Central Vermont, and somewhat by the Connecticut and Passumpsic Rivers Railroad. It is to be hoped that it will prove all that is claimed for it. And if so, railroads can obtain a superior steel rail at a price only a little in advance of the common iron rail.

There are on these different roads in Vermont, 394 bridges; some of them small and insignificant, and some very long and of great importance. The number of bridges on the several roads are as follows, to wit: Rutland, 114; Central Vermont, 89; Missisquoi, 53; Vermont and Canada, 42; Vermont Valley, 22; Addison and Extension, 37 each. Some of these bridges were built when the road was first constructed, but the greater proportion are from one year to ten years old. They have been repaired and rebuilt, and are in, I believe, a good, safe condition. Almost all of the bridges have solid, strong stone abutments, and most of them are the "T" abutments. They are considered better than the "U" or wing abutments in most places, being less liable to be thrown out of place by pressure of earth or frosts.

In the month of August I went over the Lamoille Valley road and examined it in the same manner as I examined the other roads. Although this is a new road, having been opened for travel but a short time, I find it in good condition. Their road-bed is in good condition, and they seem to have adopted the motto to go thoroughly as far as they do go. I hope they will soon be running their cars the whole length of their line. They have on this road, as far as constructed, 15 bridges. All of course are nearly new, well built, and in good condition, and have good solid masonry to rest upon. Quite a number of these bridges are not quite as high or wide as the law of 1872 provides, and R. Underwood, Esq., Superintendent of Bridges and Buildings, says as follows of the bridges: "I would say that our bridges are all built of the best quality of spruce timber, on the plan known as the 'Howe Truss,' with oak angle blocks; and they are built the usual width of railroad bridges in Massachusetts, and cannot be widened without widening the masonry,—and this of course would be attended with great expense."

They have, in addition to the above described bridges, five or six important trestle-works, some of them being of that importance I cannot pass by them without giving a more particular description. The first is about four miles above St. Johnsbury, in the town of Danville, and is 76 feet high and 700 feet long; contains 300,000 feet of spruce timber, and 35,000 pounds of iron; and costs, besides the masonry, $12,000. The next is about two and one-half miles from Walden Station, in the town of Walden. It is 300 feet long and 96 feet high; contains 200,000 feet of spruce timber and 17,000 pounds of iron; and costs, above the masonry, $6,800. The next is between Morrisville and Hydepark. It is 225 feet long and 65 feet high; contains 60,500 feet of spruce timber and 3,800 pounds of iron; and costs, above the masonry, $1,575. These, I think, are the most important trestle-works I have seen in the State, and a person of very weak nerves should not look out of the windows of the cars when passing over the highest of them, for you can look upon the tops of tall forest trees growing underneath, and it is highly suggestive of "nest-hiding" in the tops of these trees in case of any accident to the train while passing over this place. Both of these trestle-works are on a curve in the road.

In the month of August I also made an examination of the Rutland and Washington Railroad, Rutland and Whitehall Railroad, and Rensselaer and Saratoga Railroad. These are now run by the Delaware and Hudson River Canal Company, and are in very good condition, having good bridges and a very substantial road-bed. I noticed one thing that is peculiar to this road, (Rutland and Washington), that is, the greater share of the road has down now the same iron that was laid when the road was built. It is English iron, short rails—being from ten to thirteen leet long. They burn coal in their engines, and the cinders make good ballast for the road-bed The bridges are in good condition, the masonry being solid and strong.

I have not examined the Montpelier and Wells River road. I wrote to the Superintendent I would be at Montpelier August 7, 1874, to go over and make examination. I went to Montpelier that day, but the Superintendent was away, and I could not go over except on a regular passenger train, which would not afford an opportunity to make a thorough examination, so I have not been over it; but it is all new, having been opened for travel within the past year.

The railroads in Vermont, almost without exception, are in as good condition as could be expected. We can point to them with laudable pride; that in them, as in everything else, we allow no rival.

One of the strongest pieces of evidence that could be produced as to the good and safe condition of our roads and bridges, is the very few, if any, accidents that have occurred on them for the past ten years that were occasioned, or were in any way attributable to any defect in them. When we take into account the great number of trains that pass over the roads in this State in the course of one year it seems remarkable so few accidents occur.

Upon examination, I find that great care is taken by all railroad managers in this State to guard against accidents by collision; and under the precautions taken no such accidents can occur except by the greatest carelessness or neglect. Most of the roads in this State are run by telegraph..

I am informed that the business of our railroads has not been as good for the past two years as in the two preceding. This is attributable in part to the stringency of the money market, which occasioned stagnation in business, &c., &c.

During the past two years there has been no serious obstruction of trains on account of severe storms; but the Central Vermont has been very unfortunate with one of her important bridges. I refer to the Waterbury bridge, (so called) which was carried away in the spring of 1873. The company concluded to replace it with an iron bridge; and while getting ready to build the iron bridge, they erected a temporary bridge for the convenience of travel. This temporary bridge was twice carried away, which made it very inconvenient to the traveling public and expensive to the Company; but everything was done by the Company that could reasonably be expected of them to do until the iron bridge was completed. This was a Pratt Iron Truss Bridge, 453 feet long, with three equal spans, and was built by the New England Iron Bridge Company, and was warranted to stand a certain test:—nearly three times as much weight as it would ever be called upon to bear while in use. The Railroad Company was to pay for the same $90 per linear foot, being over $40,000. The bridge was completed in the month of January, 1874, and ready to be tested. The day appointed for testing and accepting the bridge was a very cold and frosty one; but notwithstanding this, quite a number of people were present to witness the trial. The first test was that of speed, which it stood with scarcely any effect upon it; and so on to the last test, which was that of dead weight, which was tried as follows: cars were loaded with rails, (iron) and drawn slowly over the bridge. This train passed over the two first spans and was nearly across the last, when, owing to a defective piece of iron, it gave way; and the cars loaded with iron rails and that span of the bridge went into the bottom of the river, all a perfect wreck. What was the most remarkable feature of the whole there were no lives lost, although there were men on the bridge and beside of it, and many under it, and two men were on the car load of iron and who went down with it through the ice into the river; one escaped with a broken collar bone and the other with quite a severe scalp wound, neither being seriously injured.

Too much praise cannot be given to the engineer, whose name I did not learn, in charge of the testing train, for his coolness and judgment at that time, thereby saving, no doubt, quite a number of lives. It being very cold, quite a number of persons were on the engine and tender in order to keep warm, and also to witness the test. The heavy train was slowly approaching the end of the bridge, having safely passed two spans and was nearly across the last, when the engineer, looking back, saw the bridge giving away. With the rapidity of thought he reversed his engine, and then putting on a full force of steam the engine sprang forward, breaking its coupling and tearing it away from its load of iron, and was the next instant off from the bridge safe with its valuable load, while the cars and iron went down into the river.

The company soon after commenced re-building the iron bridge under the superintendence of the same engineer, E. R. Hewins, Esq., which is now completed, but has not been tested and accepted by the Railroad Company.

In addition to the history of railroads in this State, the following companies were chartered the last session of the Legislature, and some of them organized, to wit:

The Central Vermont.
The Bellows Falls, Springfield and Woodstock.
The Bridgewater, Plymouth and Ludlow.
The Lamoille Junction.
The East Middlebury Branch.
The Lamoille Valley Extension.
The Middletown Springs and Tinmouth Iron and Marble.
The Midland.
The Montpelier and Black River.
The Montpelier, Hardwick and Black River.
The Montpelier and Rutland.
The Mount Mansfield.
The Northern Vermont and Lake Champlain Extension.

Vermont, as well as other States, has for the past few years passed enabling acts permitting towns to aid in the construction of railroads by issuing town bonds for this purpose. This has met with bitter opposition; but without this aid many roads that are now in operation and which have been built within the past six or seven years, could not have been built. When we take into consideration the expense of building, equiping and running railroads in this State, there are very few roads that ever pay any dividend on their capital stock. But generally what is paid by towns for this purpose, when the road is built, increases the value of the property of the town far more than what is expended.

In conclusion permit me to say that what has been accomplished by railroad enterprise in this State within the past few years has been of great and permanent advantage to the whole State, and in fact, to the whole United States. Railroads have been extended to all portions of our State. Scarcely a town but some portions of it are within the sound of the engine's whistle. Real and personal estate has been greatly enhanced in value.

Many towns in the State have become noted places of summer resort. Our beautiful scenery, healthy atmosphere; our many mineral springs,—to say nothing of thousands of other attractions in our State—have been brought to the notice of summer tourists, and by direct communications with our railroads have contributed largely to the increase of the wealth and prosperity of State.

These and many other reasons should lead us to foster and encourage our railroad enterprises as much as possible without doing injustice to other enterprises. On the other hand, the companies sholud be held to a strict accountability for the trusts reposed in them by the State; for while they are in one sense a private corporation empowered to do certain acts, yet they are accountable to the State that they perform them in such a manner as to be of the greatest good to all.

Of the forms for reports furnished the managers of the several Vermont railroads; as far as have been returned to me, are hereunto attached.

All of which is respectfully submitted.

MYRON W. BAILEY,
Railroad Commissioner.

BIENNIAL REPORT OF THE

CONNECTICUT AND PASSUMPSIC RIVERS AND MASSAWIPPI VALLEY RAILROAD COMPANIES.

For the years ending June 30, 1874.

TABLE B.

COST OF CONSTRUCTION.

Total cost of construction as per last report,	$3,385,535 60
Expended since last report, viz:	
For graduation and masonry, bridges, rails, chairs, spikes and ties, laying superstructure, and for buildings and fixtures,	$75,964 69

TABLE D.

CHARACTERISTICS OF ROAD.

Total length of road,	148 miles.
Total length of road in Vermont,	110 "
Length of road completed,	148 "
Length of branches,	3 "
Average weight of rails per yard,	56 lbs.

CHARACTER AND LENGTH OF BRIDGING.

	No. of structures	No. of spans.	Length of bridging in feet.
Trestle bridging..........	11	0	2,050
Truss bridging, 50 feet span and under...	13	18	796
Truss " from 50 to 100 ft. span...	7	10	666
Truss " from 100 to 150 ft. span..	5	5	580
Truss " 150 ft. span and over....	11	14	2,014
Draw bridges........................	0	0	0
Totals...........................	47	47	6,076

Number of road crossings at grade,	74
Number of road crossings above and below grade,	7
Average number of cross ties, per mile,	2,200
Average length of rail,	440 to 680
Whole number of switches on main track,	about 80

BUILDINGS AND FIXTURES.

Passenger houses,	32
Freight houses,	32
Engine houses,	4
Repair shops,	1
Water stations,	20
Dwellings,	26
Woodsheds,	30
Turn tables,	3

EQUIPMENTS.

Number of locomotives owned by the company on the 30th day of June, 1874.

	Und'r 16 tons.	16 to 20 tons.	20 to 25 tons.	25 to 30 tons.	30 tons and over.
In good repair..........			1		11
Requiring slight repairs.			3	3	3
Requiring heavy repairs.			2	1	
Worn out..............			1		

Number of cars owned by the company, July 31, 1872,	717
First class 8 wheel passenger cars in good repair,	9
Second class 8 wheel passenger cars in good repair,	2
Second class 8 wheel passenger cars wanting repair	2
Baggage, express and mail cars in good repair,	6
Covered freight and cattle 8 wheel cars in good repair,	214
Covered freight and cattle 8 wheel cars wanting repair,	23
Platform 8 wheel cars in good repair,	340
Platform 8 wheel cars wanting repair,	7
Other freight cars,	94
Gravel cars,	20

Average weight of passenger cars,	about 36,000 lbs.
" " baggage cars,	30,000 lbs,
" " box "	15,000 lbs.
" " platform "	13,500 lbs.
" " sleeping "	40,000 lbs.

TABLE E.

BUSINESS OF THE LAST TWO YEARS.

Miles run by passenger trains,	252,145
Miles run by freight trains,	193,575
Miles run by gravel and construction trains,	10,008
Miles run by wood trains,	2,994
Number of through passengers carried in cars,	61,696
Number of way passengers,	131,833
Number of tons of through and way freight,	153,343
Total number of tons of freight carried 1 mile,	9,722,137
Total number of passengers carried 1 mile,	6,786,788
Average rate of speed of ordinary passenger trains,	25 miles per hour.
Average rate of speed of express trains,	30 " "
Average rate of speed of freight trains,	14 " "
Rate of fare charged first class through passengers per mile,	3 to 4 cents.
Average rate of fare charged second class passengers per mile,	2 to 3 cents.

TABLE F.

The expenses of maintaining roadway and real estate for the two years, including ordinary and extraordinary repairs of road bed and superstructure, cross ties used for renewal. new rails used in repairs and relaying the same, insurance and taxes,	$340,834 72

Repairs of bridges,	$19,523	34
Repairs of stations, fences, road repairs, masonry,	25,255	82
Total,	$385,613	88

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders,	$80,126	25
Repairs of passenger, baggage, freight, gravel cars,	112,988	91
Repairs of tools and machinery in workshops,	5,930	08
Total,	$199,045	24

TABLE G.

COST OF OPERATING THE ROAD FOR THE LAST TWO YEARS ENDING JUNE 30, 1874.

Cost of wood and coal used on locomotives,	$163,981	49
Cost of oil and waste for engines and tenders, passenger, baggage and freight cars,	18,015	55
Loss and damage of freight and baggage, damages for injuries to persons, damages to property, including fire, and animals killed on road,	14,026	05
Pay of agents and clerks, labor loading and unloading freight,	51,558	60
Watchmen,	2,428	00
Switchmen,	2,199	44
Conductors, baggagemen and brakemen,	45,622	27
Enginemen and firemen,	57,805	95
Shop expenses,	13,523	54
For salaries of president, directors, treasurer, superintendent, cashier and clerks,	25,709	09
For printing, stationery, and office expenses,	14,447	64
For law expenses,	1,867	31
Insurance,	11,791	81
General expenses other than charged above,	32,040	35
Total,	$1,039,676	12

RECAPITULATION OF EXPENSES.

Maintaining roadway,	$385,613 88
Repairs of machinery,	199,045 24
Operating,	455,017 00
Proportion of expense due to passenger business,	74,174 77
Proportion of expense due to freight business,	116,213 80

TABLE H.

EARNINGS, RECEIPTS AND PAYMENTS.

EARNINGS AND RECEIPTS.

From passengers,	$574,598 80
From freight,	929,867 02
Expresses,	16,500 02
Mails,	35,811 27
Rents,	18,024 53
Total,	$1,574,741 64

PAYMENTS OTHER THAN FOR CONSTRUCTION.

For transportation expenses, viz:	
For passenger business,	$74,174 77
For freight business,	116,213 80
For interest on funded debt.	168,108 85
For interest on floating debt,	23,493 39
For dividends,	351,584 49
For carried to surplus fund,	3,412 37
For amount of surplus fund,	3,412 37

VALUE OF MATERIALS ON HAND.

Wood,	$80,232 50
Coal, oil, waste, old and new iron rails, chairs and spikes,	33,061 23
Ties,	2,028 40
Iron and other metals, unwrought, worked and unworked, lumber, stoves and material,	57,087 21

DETAILS OF EARNINGS FOR THE YEAR ENDING FEBRUARY, 1873.

SOURCE.	SEPTEMBER, 1872.	OCTOBER, 1872.	NOVEMBER, 1872.	DECEMBER, 1872.	JANUARY, 1873.	FEBRUARY, 1873.
Through passengers	$37,005.95	$27,907.58	$23,498.96	$17,425.12	$13,011.12	$12,230.41
Way passsegers						
Through freight	47,355.32	57,595.48	43,124.91	31,411.78	27,931.23	28,383.12
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Total						

DETAILS OF EARNINGS.—*Continued.*

SOURCE.	MARCH, 1873.	APRIL, 1873.	MAY, 1873,	JUNE, 1873.	JULY, 1873.	AUGUST, 1873.
Through passengers	$21,087.68	$25,166.95	$19,834.54	$22,089.10	$32,769.84	$40,127.06
Way passengers						
Through freight	31,118.85	33,626.33	44,566.37	41,273.42	40,801.34	50,251.62
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Totals						

DETAILS OF EARNINGS FOR THE YEAR ENDING FEBRUARY, 1874.

SOURCE.	SEPTEMBER, 1873.	OCTOBER. 1873.	NOVEMBER, 1873.	DECEMBER, 1873.	JANUARY, 1874.	FEBRUARY, 1874.
Through passengers	$35,014.70	$25,245.60	$24,650.85	$17,763.17	$13,219.68	$14,171.29
Way passengers						
Through freight	48,610.95	51,367.65	31,470.45	30,208.91	26,754.23	25,676.71
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Totals						

DETAILS OF EARNINGS.—*Continued.*

SOURCE.	MARCH, 1874.	APRIL, 1874.	MAY, 1874.	JUNE, 1874.	JULY, 1874.	AUGUST. 1874.
Through passengers	$20,064.35	$22,655.25	$18,600.51	$23,404.70	$38,336.47	$29,317.92
Way passengers						
Through freight	33,122.21	32,094.48	39,082.99	36,319.05	49,757.54	47,902.08
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Totals						

TABLE I.

ACCIDENTS.

March 31, 1874—Jonathan Northrop, Sherbrooke, P. Q.; crushed between cars while walking on track,

August 4, 1874—John Orr, run over while lying on track near Capleton. Cause—intoxication.

Run over while walking or lying on track, 2.

Total number of persons killed, 1.

TABLE J.

NUMBER OF EMPLOYES AND COMPENSATION.

9 Conductors of passenger trains,
Amount of compensation. Mail, $70. Express $60 per month.
9 Conductors of freight trains,
Amount of compensation, $60. Stock train, $70 per month.
Conductors of wood and gravel trains,
Amount of compensation, $60 per month, included in freight trains
1 Master mechanic and master car builder,
Amount of compensation, $2,400 per year.
3 Road masters,
Amount of compensation, $3, $3, $35 per month.
Men in repair shops,
Amount of compensation, $1.50 to $3.50 per day.
Average 9 Enginemen of passenger trains,
Amount of compensation, $3.25 to $3.46 per day.
9 Enginemen of freight trains,
Amount of compensation, $2.00 to $3.25 per day.
Enginemen of wood and gravel trains,
Amount of compensation included in freight trains.
9 Firemen,
Amount of compensation, from $1.60 to $1.75 per day.
7 Baggagemen,
Amount of compensation, from $1.75 per day to $60 per month.
6 Switchmen,

Amount of compensation, from	$1.75 to $1.85 per day.
36 Section men, (Foremen,)	
Amount of compensation, from	$1.75 to $2 00
Average 144 section hands,	
Amount of compensation,	$1.50 per day.
7 Watchmen,	
Amount of compensation,	$1.50 to $1 75 per day.
33 Station agents,	
Amount of compensation, from	$15 to $80 per month.
15 Other laborers,	
Amount of compensation,	$1.50 per day to $60 per month.
2 Clerks connected with passenger business,	
Amount of compensation,	$20 and $60 per month.
3 Clerks connected with freight business,	
Amount of compensation,	$32.50 to $62.50 per month.
Superintendent of bridges—salary,	$100 per month.
Wood agent—salary,	$75 per month.

Balances, August 22, 1874.

Construction,		$3,461,500 29
Wood lots,		5,028 14
Notes receivable,		12,620 19
Superintendent, stock of wood, &c , on hand,		173,366 46
Missisquoi & Clyde Rivers Railroad bonds,		350,000 00
South Eastern Railroad Company,		89,112 75
Cash,		75,367 50
Interest,		10,602 37
Memphremagog House,		60,433 30
Montpelier and Wells River Railroad,		76,779 16
		$4,214,810 17
Coupons and dividends uncalled for,	$6,751 34	
Lyndon lands,	30,178 65	
Stock issued,	2,175,500 00	
Stock partially paid,	2,948 23	
Funded debt,	1,534,000 00	
Floating debt,	268,119 58	

Trustees of Sinking Fund,	$65,900 00	
Reserved,	128,000 00	
Earnings,	3,412 37	
		$4,214,810 17

SUFFOLK, SS. }
Boston, August 25, 1874. }

I, Nath. P. Lovering, Treasurer of the Connecticut and Passumpsic Rivers Railroad Company, do solemnly swear that the above is a true statement of the balances on the books of said company, on the 22d day of August, 1874.

N. P. LOVERING, *Treasurer.*

Sworn before me,

E. PICKERING, *Justice of the Peace.*

OFFICERS OF THE COMPANY.

President, Emmons Raymond, Boston, Mass.
Treasurer, N. P. Lovering, Boston, Mass.
Secretary, Elijah Cleveland, Coventry, Vt.
Superintendent, Geo. A. Merrill, Lyndonville, Vt.
General Freight Agent, H. E. Folsom, Lyndonville, Vt.
Car Ticket Agent, N. P. Lovering, Jr., Lyndonville, Vt.
Cashier, H. Hastings, Lyndonville, Vt,

Does any conductor or engineman in the employ of your road indulge in intoxication? No.

Please answer the same question as applied to section men brakemen, and switchmen? No.

Are the trains on your road allowed to stand across highway crossings, to the unnecessary delay of highway travel or business? No.

Do your station men allow boys without business to frequent and remain about the trains while stopping at stations? No.

Are your road fences and cattle-guards such as the law demands?

STATE OF VERMONT, }
CALEDONIA COUNTY, SS. } I, George A. Merrill, Superintendent, depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct according to the best of my knowledge, information and belief.

Signed, GEO. A. MERRILL,
Superintendent C. & P. R. & M. V. R. R.

Subscribed and sworn to before me this 19th day of August, 1874.

HUBBARD HASTINGS.
Master in Chancery.

BIENNIAL REPORT OF THE

PORTLAND AND OGDENSBURG RAILROAD—VERMONT DIVISION.

For the two years ending July 31, 1874.

TABLE D.

CHARACTERISTICS OF ROAD.

Total length of road,	117 miles.
Total length of road in Vermont,	117 "
Length of road in operation,	60 "
Average weight of rails per yard,	56 lbs.

CHARACTER AND LENGTH OF BRIDGING.

	No. of structures	No. of spans.	Length of bridging in feet.
Trestle bridging..........	24	0	6,375
Truss bridging, 50 feet span and under...	0	0	0
Truss " from 50 to 100 ft. span...	7	7	469
Truss " from 100 to 150 ft. span..	7	7	840
Truss " 150 ft. span and over....	3	3	505
Draw bridges........................	0	0	0
Totals........................	41	17	8,189

Number of road crossings at grade,	57
Number of road crossings above and below grade,	8
Average number of cross ties per mile,	2,300
Average length of rail,	24 ft.
Whole number of switches on main track,	31

GRADIENTS AND ALIGNMENT.

Level, number of miles,	13.51
Maximum grade, 65 ascending east, 85 descending east.	
Amount of straight line, miles,	29.37
Amount of curved line, miles,	30.63
Maximum radius,	8594
Minimum radius,	716
Sum of ascents going in one direction,	1386
Sum of ascents going in opposite direction,	1131

Height of termini and summit above tide water, Hydepark, 575, Walden Heights, 1692, West Concord, 840.

BUILDINGS AND FIXTURES.

Passenger and freight houses,	7
Passenger houses,	5
Freight houses,	4
Engine houses,	2
Repair shop,	1
Water stations,	7
Dwellings,	4
Wood sheds,	5
Turn tables,	2

EQUIPMENT.

Number of locomotives owned by the company on the 31st day of July, 1872, 5.

	Und'r 16 tons.	16 to 20 tons.	20 to 25 tons.	25 to 30 tons.	30 tons and over.
In good repair..........				3	2
Requiring slight repairs.					
Requiring heavy repairs.					
Worn out..............					

Number of cars owned by the Company, July 31st, 1874,	95
First class 8 wheel passenger cars in good repair,	3
First class 8 wheel passenger cars wanting repair,	1

Baggage, express and mail cars in good repair,	2
Baggage, express and mail cars wanting repair,	1
Covered freight and cattle 8 wheel cars in good repair.	33
Platform 8 wheel cars in good repair,	31
Other freight, caboose and derrick cars,	14
Gravel,	10
	—95

TABLE E.

BUSINESS OF THE LAST TWO YEARS.

Miles run by passenger trains,	66,441
Miles run by mixed and freight trains.	71,395
Miles run by gravel and construction trains,	19,100
Miles run by wood trains,	3,687
Number of through passengers carried in cars,	4,238
Number of way passengers,	63,504
Number of miles traveled by way passengers,	1,101,459
Number of miles traveled by through passengers,	124,501
Average distance traveled by way passengers,	17
Number of tons of through freight,	12,438
Number of tons of way freight,	23,579
Number of tons of way freight carried 1 mile,	469,048
Number of tons of through freight carried 1 mile,	371,341
Total number of tons of freight carried 1 mile,	840,389
Total number of passengers carried 1 mile,	67,742
Average rate of speed of ordinary passenger trains,	21 miles.
Average rate of speed of express trains,	21 "
Average rate of speed of freight trains,	12 "
Rate of fare charged first class through passengers per mile,	3 to 4 cents.

TABLE G.

COST OF OPERATING THE ROAD FOR THE LAST TWO YEARS, ENDING JULY 31, 1874.

Cost of wood used on locomotives,	$22,089 00
Number of cords of wood used by locomotives,	5,970
Number of cords of wood used at stations,	136

RECAPITULATION AND EXPENSES.

Operating,	$143,439 20

TABLE H.

EARNINGS, RECEIPTS AND PAYMENTS.

EARNINGS AND RECEIPTS.

From passengers,	$53,073 39
From freight,	86,541 27
Expresses and mails,	13,988 87
	$153,603 53

VALUE OF MATERIALS ON HAND.

Wood, cords of,	2,965
Ties, number of,	5,000

TABLE I.

ACCIDENTS.

Newell Harris, brakeman on mixed train, was fatally injured October 15, 1872, by striking bridge.

Charles Chapman, brakeman on cattle train, killed November 18, 1872, struck by bridge while on top of car.

—— Goddard, instantly killed September 1, 1872, run over by passenger train.

Barney McGinley, killed near Morrisville, October 29, run over by passenger train. He was supposed to be intoxicated.

Leander Parker fatally injured June 9, 1874, near East St. Johnsbury station. He was attempting to get on to the cars while in motion and slipped, crushing himself between car and depot platform. Died same day.

Total number of persons killed,	1
Total number of persons injured, but not killed,	4

TABLE J.

NUMBER OF EMPLOYES AND COMPENSATION.

Conductors of passenger trains,

Amount of compensation, $60 to $75 per month.

Conductors of freight trains,
Amount of compensation, $60 to $65 per month.

OFFICERS OF THE COMPANY.

Executive Committee.—Horace Fairbanks, Chairman, St. Johnsbury, Vt., A. B. Jewett, Geo. W. Hendee, C. Morrill and F. Fairbanks.

W. H. Bryant, General Agent, St. Johnsbury, Vt.
A. W. Hastings, Cashier, St. Johnsbury, Vt.
A. C. Mitchell, Chief Engineer, St. Johnsbury, Vt.
George E. Howe, Master Mechanic, St. Johnsbury, Vt.
George B. Warner, Road Master, St. Johnsbury, Vt.

Does any conductor or engineman in the employ of your road indulge in intoxication? Not to our knowledge.

Please answer the same question as applied to section men, brakemen and switchmen. Not to our knowledge.

Are the trains on your road allowed to stand across highway crossings, to the unnecessary delay of highway travel or business? They are not.

Do your station men allow boys without business to frequent and remain about the trains while stopping at stations? Not to our knowledge.

STATE OF VERMONT, }
CALEDONIA COUNTY, SS. }

I, W. H. Bryant depose and say that the facts set forth, and statements made in the foregoing report, which has been signed by me, are true and correct, according to the best of my knowledge, information and belief.

Signed, W. H. BRYANT, *General Agent.*

Subscribed and sworn to before me this 18th day of August, 1874.

CALVIN MORRILL, *Notar*

BIENNIAL REPORT OF THE

ATLANTIC AND ST. LAWRENCE RAILROAD COMPANY,

For the two years ending June 30th, 1874.

EXPLANATORY LETTER.

GRAND TRUNK RAILWAY OF CANADA.
Office of the Secretary and Treasurer,
Montreal, June 10th, 1874.

Dear Sir:

I received in due course your letter written from the Albion Hotel, Montreal, on the 5th instant, enclosing two blank forms of Report to be filled up by this Company.

In the first place, allow me to thank you sincerely for the friendly sentiments which you express towards the Railway, and your good offices on its behalf.

I am doubtful whether our records enable me to give you exactly the information which the Report calls for, as regards that portion of the Railway which is situate in the State of Vermont, inasmuch as that section comprises less than 2½ per cent of our total mileage and all our accounts and statistics are based upon the operations distributed over the entire length of the Railway, viz, 1378 miles.

The notes which I have penciled on the margin of the Report returned herewith state more particularly the difficulties in the way of complying with your request.

If you could indicate a method of surmounting these difficulties in such a way as to secure an accomplishment of the object sought to be obtained, I shall be most happy to fall in with your views.

Kindly let me hear from you on the subject, and believe me,

Yours very faithfully,
JOSEPH HICKSON, *Secretary and Treasurer.*
By R. WRIGHT.

MYRON W. BAILEY, ESQ.,
Comm'r of Railways for the State of Vermont, St. Albans.

REPORT AS RETURNED.

TABLE B.*

COST OF CONSTRUCTION.*

Total cost of construction as per last report,

Expended since last report, viz:

For graduation and masonry, bridges, rails, chairs, spikes and ties, laying superstructure, and for buildings and fixtures,

Note.—State, also, the progress of the work, cost of graduation, superstructure, and all incidental expense, or any extension or alteration of road, to July 31st, 1874.

Also, state the amount for interest, discount, &c., charged to construction account.

TABLE C.†

EQUIPMENT.†

Total cost of equipment as per last report,

Expended since last report,

Total cost of road and equipment,

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* Impossible to state more than the average cost per mile, based upon the total mileage of the railway. The figures would not accurately represent the actual cost of that portion of the railway situated in Vermont.

† See above.

TABLE D.*

CHARACTERISTICS OF ROAD.

Total length of road,

Total length of road in Vermont,

Length of road completed,

Length of branches,

Length of side track,

Average weight of rails per yard,

CHARACTER AND LENGTH OF BRIDGING.*

	No. of structures	No of spans.	Length of bridging in feet.
Trestle bridging..........................			
Truss bridging, 50 feet span and under...			
Truss do from 50 to 100 feet span..			
Truss do from 100 to 150 feet span			
Truss do 150 feet span and over...			
Draw bridges..........................			
Total............................			

Number of road crossings at grade,

Number of road crossings above and below grade,

Average number of cross ties, per mile,

Average length of rail,

Whole number of switches on main track,

GRADIENTS AND ALIGNMENT.*

Level, number of miles, .

Maximum grade,

Amount of straight line, miles,

Amount of curved line, miles,

Maximum radius,

Minimum radius,

Sum of ascents going in one direction,

Sum of ascents going in opposite direction,

Height of termini and summit above tide water,

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* This information we can of course give, if it is desired, apart from the rest.

BUILDINGS AND FIXTURES.*

Passenger houses,
Freight houses,
Engine houses,
Repair shops,
Water stations,
Dwellings,
Wood sheds,
Turn tables,

EQUIPMENTS.†

Number of locomotives owned by the company on the 30th day of June, 1874.

	Under 18 tons.	16 to 20 tons,	20 to 25 tons.	25 to 30 tons.	30 tons and over.
In good repair...........					
Requiring slight repairs..					
Requiring heavy repairs..					
Worn out...............					

Number of cars owned by the company, July 31st 1872.
First class 8 wheel sleeping cars in good repair,
First class 8 wheel passenger cars in good repair,
First class 8 wheel passenger cars wanting repair,
Second class 8 wheel passenger cars in good repair,
Second class 8 wheel passenger cars wanting repair,
Baggage, express and mail cars in good repair,
Baggage, express and mail cars wanting repairs,
Covered freight and cattle 8 wheel cars in good repair,
Covered freight and cattle 8 wheel cars wanting repair,
Platform 8 wheel cars in good repair,
Platform 8 wheel cars wanting repair,
Other freight cars,
Gravel cars,

---

* Same answer as on preceding page.

† The greater part of the Company's Rolling Stock is never run over the Vermont portion of the line. The figures would, therefore, be of no use to your purpose.

*Average weight of passenger cars,
" " baggage cars,
" " box "
" " platform "
" " sleeping "

TABLE E.†

BUSINESS OF THE LAST TWO YEARS.†

Miles run by passenger trains,
Miles run by freight trains,
Miles run by gravel and construction trains,
Miles run by wood trains,
Number of through passengers carried in cars,
Number of way passengers,
Number of miles traveled by way passengers,
Number of miles traveled by through passengers,
Average distance traveled by way passengers,
Number of tons of through and way freight,
Total number of tons of through freight carried 1 mile,
Total number of tons of way freight carried 1 mile,
Total number of tons of freight carried 1 mile,
Total number of passengers carried 1 mile,
Average rateof speed of ordinary passenger trains,
Average rate of speed of express trains,
Average rate of speed of freight trains,
Rate of fare charged first class through passengers per mile,

---

* See note on preceding page.

† We have no sub-division of statistics which would enable us to show this as regards the Vermont section of the railway.

Average rate of fare charged second class passengers per mile,
“ “ “ “ first class through freight,
“ “ “ “ second class through freight,
“ “ “ “ third class through freight,
“ “ “ “ fourth class through freight,
“ “ “ “ first class way freight,
“ “ “ “ second class way freight,
“ “ “ “ third class way freight,
“ “ “ “ fourth class way freight,

TABLE F.*

Expenses of maintaining roadway and real estate for the two years, including ordinary and extraordinary repairs of road bed and superstructure, cross ties used for renewal, new rails used in repairs and relaying the same, insurance and taxes,
Repairs of bridges,
Repairs of stations, fences, road repairs, masonry,
Total,

COST OF REPAIRS OF MACHINERY.*

Repairs of engines and tenders,
Repairs of passenger, baggage, freight, gravel cars,
Repairs of tools and machinery in workshops,
Oil used at stations and workshops,
Fuel used at stations and workshops,
Waste used at stations and workshops,
Other items in detail as follows:
Total,

---

* See note on preceding page.

TABLE G.*

COST OF OPERATING THE ROAD FOR THE LAST TWO YEARS ENDING JUNE 30, 1874.*

Cost of wood and coal used on locomotives,
Cost of oil and waste for engines and tenders, passenger, baggage and freight cars,
Loss and damage of freight and baggage, damages for injuries to persons, damages to property, including fire, and animals killed on road,
Office expenses and stationery,
Pay of agents and clerks, labor loading and unloading freight,
Watchmen,
Switchmen,
Conductors, baggagemen and brakemen,
Enginemen and firemen,
For salaries of president, directors, treasurer, superintendent, cashier and clerks,
For printing, stationery, and office expenses,
For law expenses,
General expenses other than charged above,
Total,

RECAPITULATION OF EXPENSES.*

Maintaining roadway,
Repairs of machinery,
Operating,
Proportion of expense due to passenger business,
Proportion of expense due to freight business,
Total,

---

* See note on preceding page.

TABLE H.*

EARNINGS, RECEIPTS AND PAYMENTS.*

EARNINGS AND RECEIPTS. *

From passengers,
From freight,
Expresses,
Mails,
Rents,
Miscellaneous,

PAYMENTS OTHER THAN FOR CONSTRUCTION.*

For transportation expenses, viz :

For passenger business.
For freight business,
For other business, and what,
For interest on funded debt.
For interest on floating debt,
For dividends,
For carried to surplus fund,
For amount of surplus fund,

VALUE OF MATERIALS ON HAND.*

Wood,
Coal, oil, waste, old and new iron rails, chairs and spikes,
Ties,
Iron and other metals, unwrought, worked and unworked, lumber,
Other items specified as follows :

COST OF TRANSPORTATION.*

Actual cost of transporting freight per ton, per mile,
Actual cost of transporting passengers, per mile,

---

* See note on preceding page.

DETAILS OF EARNINGS FOR THE YEAR ENDING 187.*

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER	JANUARY.	FEBRUARY.
Through passengers						
Way passengers						
Through freight						
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Totals						

*See note on preceding page.

DETAILS OF EARNINGS.—*Continued.**

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers						
Way passengers						
Through freight						
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Totals						

*See note on preceding page,

DETAILS OF EARNINGS FOR THE YEAR ENDING 1873.*

SOURCE.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	JANUARY.	FEBRUARY.
Through passengers……………………						
Way passsegers……………………						
Through freight……………………						
Way freight……………………						
Express……………………						
Transport of mails……………………						
Use of engines……………………						
Use of cars……………………						
Rent……………………						
Other earnings specified in detail as follows:						
Total……………………						

*See note on previous page.

DETAILS OF EARNINGS.—*Continued.**

SOURCE.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.
Through passengers						
Way passengers						
Through freight						
Way freight						
Express						
Transport of mails						
Use of engines						
Use of cars						
Rent						
Other earnings specified in detail as follows:						
Totals						

*See note on previous page.

TABLE I.*

ACCIDENTS.*

State the number of persons injured in life or limb, and the cause thereof, and whether passengers or persons employed.

State whether any such accidents have arisen from carelessness or negligence of any person in the employ of the corporation, and whether such person is retained in the service of the corporation.

Total number of persons killed,

Total number of persons injured, but not killed,

In addition to which must be given a statement of the date of each accident, the place where it occurred, the train, the cause and the extent of the injuries inflicted upon each person, and the name of such person.

TABLE J.†

NUMBER OF EMPLOYES AND COMPENSATION.†

Conductors of passenger trains,
Amount of compensation.
Conductors of freight trains,
Amount of compensation,
Conductors of wood and gravel trains,
Amount of compensation,
Master mechanic,
Amount of compensation,
Road masters,
Amount of compensation,
Men in repair shops,
Amount of compensation,
Enginemen of passenger trains,
Amount of compensation,
Enginemen of freight trains,

---

[*] We can collate this information, as regards the Vermont railways from our general records, if it is desired.

[†] See note on preceding page.

Amount of compensation,

Enginemen of wood and gravel trains,

Amount of compensation

Firemen,

Amount of compensation,

Baggagemen,

Amount of compensation,

Switchmen,

Amount of compensation, from

36 Section men, (Foremen,)

Amount of compensation, from

Section hands,

Amount of compensation,

Watchmen,

Amount of compensation,

Station agents,

Amount of compensation, from

Other laborers,

Amount of compensation,

Clerks connected with passenger business,

Amount of compensation,

Clerks connected with freight business,

Amount of compensation,

Superintendent of bridges—salary,

Other agents—salary,*

Does any conductor or engineman in the employ of your road indulge in intoxication?†

Please answer the same question as applied to section men, brakemen, and switchmen?†

Are the trains on your road allowed to stand across highway crossings, to the unnecessary delay of highway travel or business?†

Do your station men allow boys without business to frequent and remain about the trains while stopping at stations?†

---

* See note on preceding page.

† I do not think any railway manager could answer these questions in the affirmative without proclaiming himself incompetent.

BIENNIAL REPORT OF THE

RENSSELAER AND SARATOGA AND WASHINGTON RAILROADS.

EXPLANATORY LETTER.

THE DELAWARE AND HUDSON CANAL COMPANY.
Cashier's Office, Albany, N. Y., Sept. 25, 1874.

M. W. BAILEY, ESQ., *Railroad Commissioner :*

I wrote you on the 20th ult. that we had no means of separating the figures of our Rensselaer and Saratoga Railroad in order to give you the operations of the Rutland and Washington branch or rather that small portion lying in the State of Vermont. We do not and cannot keep separate accounts of it. Its doings are embraced in the report to the State of New York, and I send you herein reports to said State for the years ending September 30, 1872-3.

I am informed that Z. V. K. Wilson of Rutland is the Secretary of the Vermont portion of the Rutland and Washington Railroad, and he can probably give you the cost of the road, its characteristics, and the stocks and debts, and that is all that can be given you by any one. No one but the lessee can give cost f road and stock and debts. We are the lessor of the Rensselaer and Saratoga which was the lessor of the Rutland and Washington.

Very respectfully,
W. L. M. PHELPS, *Cashier.*

BIENNIAL REPORT OF THE
CENTRAL VERMONT RAILROAD,

For the twenty-five months ending June 30, 1874.

TABLE D.

CHARACTERISTICS OF ROAD.

Total length of road,		$370\frac{95}{100}$ miles.
Vt. Central R. R.	117 miles.	
Vt. and Canada,	$65\frac{1}{2}$ "	
Rutland,	120 "	
Vt. Valley,	24 "	
Missisquoi,	$28\frac{85}{100}$ "	
Addison,	$15\frac{6}{10}$ "	
Total length of road in Vermont,		" "
Length of road completed,		" "
Length of branches,		2 "
Length of side track,		68 "
Average weight of rails per yard,		56 to 64 lbs.
Weight of rail being laid,		64 "

CHARACTER AND LENGTH OF BRIDGING.*

	No. of structures	No of spans.	Length of bridging in feet.
Trestle bridging	15		9,390
Truss bridging, 50 feet span and under	55	65	2,039
Truss do from 50 to 100 feet span	18	19	1,315
Truss do from 100 to 150 feet span	38	60	7,320
Truss do 150 feet span and over	21	41	6,035
Draw bridges	3		544
Total	150	185	26,643

Number of road crossings at grade,	268
Number of road crossings above and below grade,	54
Average number of cross ties per mile,	2,200 to 2,600
Average length of rail,	22 to 30 feet.
Length of rail being laid at present time, principally,	30 feet.
Whole number of switches on main track,	254

GRADIENTS AND ALIGNMENT.

Level, number of miles,	76 miles.
Maximum grade, main line,	Mt. Holly, 68 feet per mile. Roxbury, 43 feet per mile.

BUILDINGS AND FIXTURES.

Passenger houses,	87
Freight houses,	57
Engine houses,	9
Repair shops,	6
Water stations,	52
Dwellings,	32
Wood sheds,	68
Turn tables,	11

EQUIPMENT.

Number of cars owned by the company, July 1, 1874,	
First class 8 wheel sleeping cars in good repair,	none.
First class 8 and 12 wheel passenger cars in good and wanting repair,	70
Mail and smoking cars,	10
Baggage, express and mail cars in good repair, and wanting repair,	32
Covered freight and cattle 8 wheel cars, in good repair, and wanting repair, platform 8 wheel cars, &c., in good repair, and wanting repair,	2,441

TABLE E.

BUSINESS OF THE LAST TWO YEARS.

Miles run by passenger trains,	1,511,786
Miles run by freight trains,	3,111,517
Miles run by gravel and construction trains,	106,546
Miles run by wood trains,	89,578
Number of through passengers carried in cars,	906,383
Number of way passengers,	907,101
Number of miles traveled by way passengers,	17,196,482
Number of miles traveled by through passengers,	41,247,112
Average distance traveled by way pas'ngers,	nearly 19 miles.
Total number passengers carried one mile,	58,443,594
Number of ton of through freight,	1,799,173
Number of ton of way freight,	966,981
Average rate of speed of ordinary passenger trains,	22 miles per hour,
Average rate of speed of express trains,	27 " "
Average rate of speed of freight trains,	10 " "
Rate of fare charged first class through passengers per mile,	3 to 4 cents.
Average rate of fare charged second class passengers per mile,	2 to 3 cents.
Whole number of tons of freight carried one mile from June 1, '72, to June 30, '74,	244,196,312

TABLE F.

EXPENSES OF MAINTAINING ROADWAY AND REAL ESTATE, FOR THE TWO YEARS ENDING JULY 31, 1874.

Ordinary and extraordinary repairs of road bed and superstructure,	$698,368 92
Cost of new rails used in repairs,	405,491 68
Cost of repairs of rails,	30,608 05
Cost of cross ties used for renewals,	76,702 70
Cost of relaying rails and ties,	115,160 13

Insurance and taxes,	$50,163 57
Repairs of bridges,	143,351 89
" stations,	155,353 21
" fences,	37,321 05
Total,	$1,712,521 20

COST OF REPAIRS OF MACHINERY.

Repairs of engines and tenders,	$352,123 09
Repairs of passenger and baggage cars,	179,861 09
Repairs of freight cars,	460,068 41
Repairs of gravel cars,	6,875 61
Repairs of tools and machinery in workshops,	55,746 49
Oil used at stations and workshops,	8,570 35
Fuel used at stations and workshops,	28,961 92
Waste used at stations and workshops,	892 86
Repairs section cars,	3,266 36
" hand cars,	4,090 52
" snow plows,	9,927 19
Total,	$1,110,383 89

TABLE G

COST OF OPERATING THE ROAD FOR THE LAST TWO YEARS ENDING JULY 31, 1874.

Cost of wood used on locomotives,	$815,303 18
Number of cords of wood used by locomotives,	167,485½
Number of cords of wood used at stations,	2,310
Cost of oil and waste for engines, tenders, passenger, baggage and freight cars,	$88,747 25
Loss and damage of freight,	20,111 48
Loss and damage of baggage,	3,040 73
Damages for injuries to persons,	3,119 50
Damages to property, including fires, and animals killed on road,	2,391 25

Office expenses and stationery,	$21,330 97
Pay of agents and clerks, in general office,	147,633 02
Labor loading and unloading freight,	170,537 96
Watchmen,	30,503 24
Switchmen,	1,238 00
Freight expense,	98,493 61
Passenger expense,	97,014 47
Conductors, baggagemen and brakemen,	312,277 54
Enginemen and firemen,	260,075 34
For salaries of trustees, president, directors, treasurer and superintendent,	36,262 89
Mail expense,	5,301 71
Depot and station furniture,	12,860 00
For law expenses,	24,152 30
Other expenses in detail, as follows:	
Advertising,	7,762 87
Interest, gold premium and other expenses,	432,560 74
Total,	$2,590,718 06

RECAPITULATION OF EXPENSES.

Maintaining roadway,	$1,662,357 63
Repairs of machinery,	1,110,383 89
Operating,	2,590,718 06
Total,	$5,363,459 58

TABLE H.

EARNINGS, RECEIPTS AND PAYMENTS.

EARNINGS AND RECEIPTS.

From passengers,	$2,097,106 14
From freight,	4,471,488 55
Expresses,	69,195 44

Mails,	$123,823 25
Miscellaneous,	47,897 65
Total,	$6,809,011 03

VALUE OF MATERIALS ON HAND.

Wood, 80,478¾ cords,	$269,952 09
Coal, 1,537 tons,	11,779 15
Oil, 18,755¼ gallons,	9,423, 99
Waste, 7,887 pounds,	1,078 22
Iron and other metals, unwrought, worked and partially worked, shop stock, lumber and materials,	480,859 04
Total,	$773,092 49

TABLE I.

ACCIDENTS.

JULY 17, 1872.—John Shehan, brakeman—arm broken while engaged in making up a train at White River Junction.

JULY 19, 1872.—David E. Lincoln, brakeman, was struck by a bridge, in Putney, when on top of a car, receiving injuries which caused his death two days afterwards

JULY 25, 1872.—The body of Daniel Shehan, section hand, was found on the track near East Wallingford. It is supposed that he was lying on the track intoxicated and was run over by a night passenger train.

JULY 25, 1872.—J. F. Blood, fireman, who attempted to pass from the engine to the car next attached while the train was in motion, was struck by a bridge in Putney and instantly killed.

AUGUST 8, 1872.—George F. Colcord, brakeman, was struck by a bridge in Putney, injuring his right arm, necessitating amputation.

NOTE.—The bridge in Putney was re-built early in the year 1873, and enlarged to the requirements of the statute.

AUGUST 16, 1872.—William Mayhan was run over by a night express train, about one mile north of Center Rutland Station, and killed. He was seen in that vicinity the evening previous, intoxicated.

AUGUST 28, 1872.—William Bills, switchman at Burlington (14 years) was caught between cars and killed.

AUGUST 31, 1872.—Frank Haley—arm broken while engaged in making up a train at Rutland.

OCTOBER 9, 1872.—A. B. Sturgess, brakeman, was killed by being struck by a bridge, north of Randolph station while getting from the top to the inside of a saloon car.

William Minum, brakeman, was injured in the same way and at the same time.

NOVEMBER 13, 1872.—George Gibson, freight conductor—arm injured, necessitating amputation, by jumping from the trainwhen in motion, near Charlotte station.

JANUARY 16, 1873.—C. C. Patch, brakeman, was struck by a bridge when on top of a car, near Proctorsville station, breaking his skull. Died January 19th.

MARCH 4, 1873.—Albert Wolcott, Jr, brakeman,—foot injured, necessitating amputation, in attempting to get upon an engine when in motion, at Bellows Falls.

MARCH 29, 1873. John Smith, section hand, was killed by falling under a passing train from a snow bank beside the track. near Cavendish station.

JULY 10, 1873.—Joseph Morse was killed at a crossing at Winooski station, by reason of a collision of a wagon and horse, driven by him, and an engine.

JULY 14, 1873,—Lawrence D. Rising, aged 13 years, was killed at Randolph station, in attempting to get upon a freight train when in motion.

AUGUST 19, 1873.—Thomas Kane, a laborer in marble quarry, was killed near Brandon station by a night passenger train. Supposed to have been lying on the track, intoxicated.

AUGUST 25, 1873.—John Leverty, who was either intoxicated or deranged, and lying on the track near Georgia station, was run over by a freight train early in the morning, and injured so that he died the same day.

AUGUST 27, 1873.—Myron Stewart, brakeman, was killed by striking a bridge, as supposed, when on top of a car, near Brockway's Mills in Rockingham.

SEPTEMBER 11, 1873.—John Sullivan, who was intoxicated and attempted to pass from one car to another of a passenger train when in motion, and near East Wallingford station, fell between the cars and was killed.

SEPTEMBER 26, 1873.—John Brenan, freight brakeman, in attempting to disconnect the engine from the train, (contrary to instructions) when approaching Alburgh Springs station, fell and was run over by the train and killed.

OCTOBER 2, 1873.—Joseph Cutting, brakeman, was struck by highway bridge across the track in Clarendon, as is supposed, and killed.

NOVEMBER 22, 1873.—Joseph Tyrell, a passenger, in getting from the train, while in motion, at Ludlow station, fell between the cars and platform of the depot, and was injured so that he died on the 29th day of the following month. He was intoxicated.

NOVEMBER 24, 1873.—J. R. Thompson, freight brakeman, arm injured while switching cars at South Royalton, necessitating amputation. Died Nov. 26.

DECEMBER 24, 1873.— —— Perladin, an emigrant passenger who attempted to get upon a passenger car in the night, that was being placed in the depot at St. Albans for the morning train, was run over, injuring his foot so as to necessitate amputation.

JANUARY 5, 1874.—Charles Moss, an elderly man, who attempted to cross the railroad track with his team, in advance of an approaching passenger train, at a crossing near Randolph station, was struck by the train, breaking his arm, and otherwise injured.

FEBRUARY 21, 1874.—John Darby, freight conductor, fell between cars of his train at Burlington, and was so injured that he died the same day.

MARCH 4, 1874.—Michael McMahan, section hand, was killed at Montpelier, in trying to get upon a passenger train when in motion.

MARCH, 1874.—A boy about 14 years of age, by name of Mulhulland, in attempting to get upon a freight train when leaving St. Albans station, and passing a street crossing, fell and was run over and killed.

MAY 1, 1874.—Lewis E. Miner, who was sitting on a bridge near Northfield station, was struck by a passenger train breaking his arm and injuring him otherwise.

MAY 1, 1874.—A. C. Bronson, bridgeman, engaged with others in repairing bridge at Georgia, fell from the bridge and was instantly killed. He was not seen to fall, but the cause is supposed to have been from faintness.

TABLE J.

NUMBER OF EMPLOYES AND COMPENSATION.

24 Conductors of passenger trains,	
Amount of compensation,	$60 to 75 per month.
63 Conductors of freight trains,	
Amount of compensation,	$50 to 70 per month.
Conductors of wood and gravel trains, (service performed by locomotive engineers,)	
2 Master mechanics,	
Amount of compensation,	$8,500 per annum.
3 Road masters,	
Amount of compensation,	$100 per month.
494 Men in repair shops,	
Amount of compensation,	$1 to 4 per day.
26 Enginemen of passenger trains,	
Amount of compensation,	$3.50 per day.

78 Enginemen of freight trains,
Amount of compensation, $2.00 to 3.50 per day.

3 Enginemen of wood and gravel trains,
Amount of compensation, $3.50 per day.

107 Firemen,
Amount of compensation, $1.75 per day.

17 Baggagemen,
Amount of compensation, $50 per month.

117 Switchmen and brakemen,
Amount of compensation, $40 to 45 per month.

89 Section men, (Foremen,)
Amount of compensation, $50 per month.

459 Section hands,
Amount of compensation, $1.30 to 1.50 per day.

42 Watchmen,
Amount of compensation, $1.40 to 2.00 per day.

83 Station agents,
Amount of compensation, $15 to 100 per month.

462 other employes,
Amount of compensation, $1 to 3 per day.

10 Clerks connected with passenger business,
Amount of compensation, average, $61.50 per month.

29 Clerks connected with freight business,
Amount of compensation, average, $62.87 per month.

Does any conductor or engineman in the employ of your road indulge in intoxication?

Not to our knowledge.

Please answer the question as applied to sectionmen, brakemen and switchmen.

Not to our knowledge.

Are the trains on your road allowed to stand across highway crossings, to the unnecessary delay of highway travel or business?

They are not.

Do your station men allow boys without business to frequent and remain about the trains while stopping at stations?

They do not.

Are your road fences and cattle-guards such as the law demands?

We think they are.

I. H. C. Lockwood, Treasurer since November 10, 1873, of the Central Vermont Railroad Company, Receivers and Managers of the Vermont Central and Vermont and Canada Railroads, have caused the foregoing statements of the receipts and expenditures of said roads to be made from the books in my possession, and believe the same to be correct.

H. C. LOCKWOOD.

Subscribed and sworn to before me, this 3d day of October, A. D. 1874.

MYRON W. BAILEY, *Justice of the Peace.*

STATE OF VERMONT, }
FRANKLIN COUNTY, SS: } I, John W. Hobart, depose and say that the facts set forth and statements made in the foregoing report, are true and correct according to the best of my knowledge, information and belief.

Signed, JOHN W. HOBART,
General Superintendent.

Subscribed and sworn to before me, this 3d day of October, A. D. 1874.

MYRON W. BAILEY, *Justice of the Peace.*

SYSTEM OF RUNNING TRAINS BY TELEGRAPH,

USED ON THE

CENTRAL VERMONT RAILROAD.

OFFICE GEN'L TRAIN DISPATCHER & SUP'T TELEGRAPH,
St. Albans, Vt., Sept. 28th, 1874.

HON. MYRON W. BAILEY, *Railroad Commissioner:*

DEAR SIR:

Mr. Hobart directs me to reply to your letter of the 18th inst.

The system of running trains by telegraph was first adopted on the Central Vermont Railroad, in the spring of 1865, and is now in operation on all of the roads under the Central Vermont Railroad management, except its Harlem Extension Division where the telegraphic facilities are as yet inadequate to the purpose. It was not *original*, having been compiled from several systems then in use on other roads,—chiefly that of the Erie Railroad,—but since its adoption, many improvements in its practical operations have been made, which mark its present classification as one of the best in use.

Its organization comprises a General Train Dispatcher, who is also Superintendent of Telegraph, and whose office is a branch of the office of the General Superintendent, to whom he is directly responsible in the conduct of his duties, and through whom the orders of that officer to the Telegraph Department are communicated. This office is connected by direct wires to all stations on the line of the roads operated, with which constant communication is maintained.

A corps of assistants, designated Train Dispatcher, who are also competent telegraph operators, one being assigned to each of the several divisions of road, and has the immediate direction of the movement of trains and operation of the wire on this division.

Telegraph operators at the several stations, whose duties include the recording and telegraphing the arrival and departure of all trains at their respective stations. The *operation* of the system of Train Dispatching is governed by prescribed rules and regulations communicated to any employe, printed and bound (*Exhibit A*) convenient to be kept in constant possession while on duty. These rules goven the Train Dispatcher in the promulgation of orders as well as the trainman in his understanding and execution of them, and each performing his duty in harmony with them preserves a constant barrier against accident. It is only through a thoughtless or willful disregard of them that accidents can occur through the operation of the system.

The Train Dispatcher seated at his telegraph instruments, has before him the correct Time Table (*Exhibit B*) and a chart (*Exhibit C*) of trains and stations corresponding therewith, on which he records the arrival and departure of trains as reported by the operators at the several telegraph stations from the station record, (*Exhibit D*) or conductor's report (*Exhibit E*). This record shows the immediate whereabouts or location of all trains moving upon the road and furnishes the information on which the Train Dispatcher bases his calculations of the orders necessary, if any are required, to preserve the regularity of their movements or prevent delay to trains likely to be affected by irregularities discovered. Constant comparison of this record with the Time Table is made, and if a train having original right to the track is moving sufficiently behind its schedule time to allow the use of this unoccupied track by other trains, these rights are first limited, or taken away from the superior train by special order and then transferred to the inferior train by corresponding order, (*Exhibits F & G*).

No train is moved upon a portion of the road designated by the Time Table as assigned to or belonging at the same to another train of the same or a superior class, until those rights of the superior train have expired by limitation or been taken away by special order.

No train, for which there is no time given in the Time Table, is allowed to run upon the road without special orders from the Train Dispatcher, and, unless special rights over other trains are assigned it, it is known as a "wild" train, and must keep off the time of and out of the way of all other trains.

No train is allowed to depart from St. Albans, St. Johns, White River Junction or Rutland, without first receiving a permit, or clearance order, (*Exhibit H*) from the Train Dispatcher. This check and control of the track is necessary to enable the movement of trains into these stations, against delayed trains due to leave, without the loss of time otherwise required to transmit the orders necessary to deprive the delayed train of its right to the track till such time as it shall be ready to occupy it.

All orders affecting the movements of trains are promulgated by the Train Dispatcher, in the name of the General Superintendent, and no order is allowed to be executed until the conductor and engineer of the train have telegraphed back their understanding of it and received the indorsment that it is correct. To prevent the possibility of a difference between the order and their understanding of it, a system of "manifold train orders" has been arranged, by which the *order* and the *understanding* are impressioned at the same writing (*Exhibit J*).

This feature in train orders, so far as I am aware, is *new*, and worthy of adoption by other roads where the system of train dispatching is in use, for it is an *absolute check* against mistakes likely to occur under the old method of making separate copies of the *order* and its understanding.

The full value of the system of Train Dispatching can only be demonstrated in seasons of railroad *distress*, when its agency is most brought into requisition for relief. Under ordinary circumstances, when trains are moving regularly, starting, arriving, meeting and passing, *each* as per its schedule time, *all* in harmony, the benefits of the perfect system are little developed, and the Train Dispatcher finds his duties resting in the calm monotony of mere record and and watchfulness; but when confusion reigns, connecting trains are late, power has failed to draw its heavy burden, freshets have flowed across the track, leaving yawning gulfs to span, or drifting snows have raised a barrier to the passage of the approaching train, then the system comes to the rescue, and the Train Dispatcher finds himself with the responsibilities of a dictator, ruling here and governing there with arbitrary power. With his vigilant eye and ready will, he carefully draws the rein and guides each train into its proper position, and holds it in place till it has arrived safely at its destination.

His motto is "Vigilance and Action!" and he seeks nor finds rest till every movement anticipated has been properly executed.

Very respectfully yours, &c.,

CHARLES A. TINKER.

SUPPLEMENTAL REPORT.

SUPPLEMENTAL REPORT.

The following matters are introduced here as the more convenient form:

Soon after my election as Railroad Commissioner I received communications from quite a number of different persons, asking where they could find a book that would give them a history of the railroads in this State, more particularly of the earlier roads such as the Vermont Central, Rutland and Burlington, and Vermont and Canada. Also a historical account of the chancery suits between these roads.

I soon after this time received a communication from His Excellency, Gov. Converse, transmitting to me a communication from a committee appointed by Congress "to devise and report some measures to secure cheap interstate transportation," of which Senator Windom of Minnesota was chairman, asking for information in regard to our railroads, &c.

I then called upon my predecessor, Hon. R. F. Parker for records, books and papers belonging to this department. He at once returned to me a blank form for statistical interrogatories to be furnished railroad companies, and informed me that was all he received from his predecessor, and all that he could transmit to his successor.

I then came to the capitol and searched the Library, but could find nothing. I then inquired of various parties, and was informed that all that related to the early history of these roads were burned when the State House and Railroad Offices at Northfield and Rutland were burnt.

I then commenced to collect historical facts in regard to chartering, organizing and building the earlier railroads, the difficulties attending their construction, equipments, &c. Also the different contracts and changes, and all other events connected with these roads.

I also employed the county clerk of Franklin county to copy for me from his records all of the petitions, bills, answers, rulings, orders and decrees, and all other proceedings connected with the great chancery suit between the Vermont and Canada Railroad et al. *vs.* the Vermont Central Railroad et al., that has been pending, heard and tried from 1855 up to the present time.

This I intended to have had completed and reported to you at the present time, but I found I could not accomplish it for wa time and space for publication.

But I feel as though I should fail in doing my full duty as Commissioner if I did not report these facts to the Legislature for such action as would seem to me proper and right under the circumstances.

But it seems to me that while it can be done, a brief history of all the railroads in Vermont should be written and prepared, embracing this chancery suit up to the present time. And then the Railroad Commissioner could collect and report to the Legislature all changes that might occur from time to time, and then we should have and perpetuate a complete history of the same for all time. This would not only be interesting, but a work that would be valuable, historically, for all time to come. And now these facts can be much more easily collected than a few years hence, when all those who took part in the building of these roads have passed away.

And I trust the Legislature now in session will take such action on the subject referred to above as will secure for us a full history of our railroads up to the present date.

The roads that have not, to the present time, made a report are the Missisquoi and Clyde; Harlem Extension; and the Montpelier and Wells River. The Harlem Extension has been under the management of the Central Vermont only seven months and they could not not furnish statistics that would be of much value and therefore have made no report. As to the Rutland and Washington, and Rensslaer and Saratoga Roads, operated by the Delaware and Hudson Canal Co., see the letter on page 59. The reports accompanying this letter are the New York reports of the operating company, and are voluminous, making no distinction between the New York and Vermont portions of its lines. They arrived too late for insertion in this Report, had it been desirable.

The "Exhibits," alluded to by Mr. Tinker in his admirable report relative to the system of running trains by telegraph now in vogue on the Central Vermont Railroad, although deeply interesting as showing the complete accuracy and efficiency of the system under his superintendence are very voluminous and intricate. It is so difficult to put many of them in type for a printed Report of this character, and all were received at so late a day (Oct. 1st) that the printer found it impossible to properly print, and bind them in season to have the Reports of State Officers ready for delivery at the convening of the General Assembly. Hence these exhibits are omitted from Mr. Tinker's report.

All of which is respectfully submitted.

MYRON W. BAILEY, *Commissioner*.

St. Albans, Vt., October 3, 1874.